

Listing of Claims:

1. (Currently amended) A method for preparing a hybrid aluminosilicate polymer, comprising the following steps:

a) treating a mixed aluminum and silicon alkoxide of which the silicon has hydrolyzable substituents and one non-hydrolyzable substituent, or a mixed aluminum and silicon precursor resulting from the hydrolysis of a mixture of aluminum compounds and silicon compounds only having hydrolyzable substituents and silicon compounds having one non-hydrolyzable substituent, with an aqueous alkali, in the presence of silanol groups, the aluminum concentration being maintained at less than 0.3 mol/l, the Al/Si molar ratio being maintained between 1 and 3.6 and the alkali/Al molar ratio being maintained between 2.3 and 3

b) stirring the mixture resulting from step a) at ambient temperature of between 15°C and 35 °C in the presence of silanol groups long enough to form the hybrid aluminosilicate polymer; ~~e) optionally adding alkali to increase the alkali/Al molar ratio to 3 if required if this ratio has not already been reached in step a)~~ and then directly

~~d)~~ eliminating the byproducts formed during steps a) and b) ~~and e)~~ from the reaction medium.

2. (Original) The method according to Claim 1, wherein the alkali of step a) is selected from the group consisting of sodium, potassium, and lithium hydroxide, diethylamine and triethylamine.

3. (Original) The method according to Claim 1, wherein the silanol groups are supplied in silica or glass bead form.

4. (Original) The method according to Claim 3, wherein the silica or glass beads have a diameter between 0.2 and 5 mm.

5. (Original) The method according to Claim 1, wherein the aluminum concentration is maintained between 1.4×10^{-2} and 0.3 mol/l.

6. (Original) The method according to Claim 1, wherein the aluminum concentration is maintained between 4.3×10^{-2} and 0.3 mol/l.

7. (Original) The method according to Claim 1, wherein said alkali/Al molar ratio is about 2.3.

8. (Original) The method according to Claim 1, wherein said alkali/Al molar ratio is about 3.

9. (Cancelled)

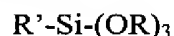
10. (Previously presented) The method according to Claim 1, wherein the mixed aluminum and silicon precursor resulting from hydrolysis of a mixture of aluminum compounds and silicon compounds only having hydrolyzable substituents and silicon compounds having one non-hydrolyzable substituent is a product resulting from the mixture in an aqueous medium (i) of a compound selected from the group consisting of aluminum salts, aluminum alkoxides and aluminum halogenoalkoxides and (ii) at least one compound selected from the group consisting of silicon alkoxides and chloroalkoxides only having hydrolyzable substituents, and (iii) at least one compound selected from the group consisting of silicon alkoxides and chloroalkoxides having one non-hydrolyzable substituent.

11. (Previously presented) The method according to Claim 10, wherein said mixed aluminum and silicon precursor is the product resulting from the mixture (i) of an aluminum halide and (ii) a mixture having at least one silicon alkoxide only having hydrolyzable substituents and at least one silicon alkoxide having ~~a~~ one non-hydrolyzable substituent.

12. (Previously presented) The method according to Claim 11, wherein the ratio of silicon alkoxide only having hydrolyzable substituents to silicon alkoxide having ~~a~~ one non-hydrolyzable substituent is between 0.1 and 10 in moles silicon.

13. (Previously presented) The method according to Claim 12, wherein the ratio of silicon alkoxide only having hydrolyzable substituents to silicon alkoxide having one non-hydrolyzable substituent is 1 in moles silicon.

14. (Previously presented) The method according to Claim 10, wherein the silicon alkoxide having one non-hydrolyzable substituent is represented by the formula



where R represents an alkyl group comprising 1 to 5 carbon atoms

R' represents H, F, or a substituted or unsubstituted non-linear or ramified alkyl or alkenyl group comprising 1 to 8 carbon atoms.

15. (Original) The method according to Claim 14, wherein R' represents a methyl, ethyl, n-propyl, n-butyl, 3-chloropropyl, vinyl group.

16. (Previously presented) The method according to Claim 15, wherein said silicon alkoxide having one non-hydrolyzable substituent is methyltriethoxysilane or vinyltriethoxysilane.

17. (Original) The method according to Claim 11, wherein said silicon alkoxide only having hydrolyzable substituents is tetramethyl orthosilicate or tetraethyl orthosilicate.

18. (Currently amended) The method according to Claim 1, comprising, after step ~~cd~~) a step ed), by which at least one ~~chelating~~ acidic modifying agent of aluminum is added to the hybrid aluminosilicate polymer resulting from step ~~db~~) to modify the surface thereof.

19. (Currently amended) The method according to Claim 18, wherein said ~~chelating~~ acidic modifying agent of aluminum is selected from the group consisting of carboxylic acids, phosphonic acids, sulfonic acids, difunctional acids, their ester and anhydride components and amino acids.

20. (Currently amended) The method according to Claim 19, wherein said ~~chelating~~ acidic modifying agent of aluminum is selected from the group consisting of HCOOH, R₁COOH wherein R₁ is selected from the group consisting of CH₃(CH₂)_n, n being between to 0 and 12, CF₃, C₆H₅, (C₆H₅)₂, substituted aromatic rings, C₄H₄S; R₂PO(OH)₂ wherein R₂ is selected from the group consisting of CH₃, C₆H₅; R₃SO₃H wherein R₃ is CH₃(CH₂)_n, n being between to 0 and 5; HOOC(CH₂)_nCOOH, n = 0-8; aromatic difunctional acids; HOOC(CH₂)_nPO(OH)₂, n = 2, 4; hydroxy aliphatic acids; HOOC(CH₂OH)_nCOOH, n = 1-2; CH₃CH(NH₂)COOH.

21. (Currently amended) The method according to Claim 18, wherein step ~~de~~) comprises a first adding of acetic acid and a following adding of another different ~~chelating~~ acidic modifying agent of aluminum.

22. (Currently amended) The method according to Claim 18, wherein the amount of ~~chelating~~ acidic modifying agent of aluminum corresponds to a molar ratio between chelating functions of the chelating agent and aluminum of the hybrid aluminosilicate polymer comprised between 0.1 and 10.

23. (Cancelled).

24. (Currently amended) The material obtainable by the method according to Claim ~~23~~ [[1]], characterized in that its Raman spectrum comprises in spectral region 200-600 cm^{-1} a wide band at $250 \pm 6 \text{ cm}^{-1}$, a wide intense band at $359 \pm 6 \text{ cm}^{-1}$, a shoulder at $407 \pm 7 \text{ cm}^{-1}$, and a wide band at $501 \pm 6 \text{ cm}^{-1}$, as well as bands corresponding to the silicon non-hydrolyzable substituent, wherein the bands linked to the non-hydrolyzable substituent can be juxtaposed with other bands, the Raman spectrum being produced for the material resulting from step b) and c) and before step d).

25. (New) The method according to Claim 1 wherein the hybrid aluminosilicate polymer is characterized in that its Raman spectrum comprises in spectral region 200-600 cm^{-1} a wide band at $250 \pm 6 \text{ cm}^{-1}$, a wide intense band at $359 \pm 6 \text{ cm}^{-1}$, a shoulder at $407 \pm 7 \text{ cm}^{-1}$, and a wide band at $501 \pm 6 \text{ cm}^{-1}$, as well as bands corresponding to the silicon non-hydrolyzable substituent, wherein the bands linked to the non-hydrolyzable substituent can be juxtaposed with other bands, the Raman spectrum being produced for the material resulting from step b) and c) and before step d).

26. (New) A method for preparing a hybrid aluminosilicate polymer, comprising the following steps:

a) treating a mixed aluminum and silicon alkoxide of which the silicon has hydrolyzable substituents and one non-hydrolyzable substituent, or a mixed aluminum and silicon precursor resulting from the hydrolysis of a mixture of aluminum compounds and silicon compounds only having hydrolyzable substituents and silicon compounds having one non-hydrolyzable substituent, with an aqueous alkali, in the presence of silanol groups, the aluminum concentration being maintained at less than 0.3 mol/l, the Al/Si molar ratio being maintained between 1 and 3.6 and the alkali/Al molar ratio being maintained between 2.3 and 3

b) stirring the mixture resulting from step a) at ambient temperature of between 15°C and 35 °C in the presence of silanol groups long enough to form the hybrid aluminosilicate polymer; and then directly

c) adding alkali to increase the alkali/Al molar ratio to 3 if required if this ratio has not already been reached in step a); and then directly

d) eliminating the byproducts formed during steps a) and b) and c) from the reaction medium.